IN THE SPECIFICATION

Please replace paragraph 1 with the following paragraph.

[0001] This application is a continuation application of U.S. Application Serial No. 09/892,007 filed June 26, 2001, which claims the benefit of U.S Provisional Application No. 60/215,441 filed June 30, 2000.

Please replace paragraph 25 with the following paragraph:

[0025] When inserted into switch housing assembly 14, in an exemplary embodiment fuse 12 at least partially protrudes from or extends from fuse receptacle 20 so that local fuse state indication, explained in detail below, is accomplished by visual inspection of the exterior of fuse 12 while operatively connected to switch housing assembly 14. In addition, because in an illustrative embodiment a portion of fuse 12 extends from fuse receptacle, fuse 12 may be readily inserted into and removed from switch housing assembly 14 by hand, i.e., without requiring tools, by simply gripping the ~~top of portion~~ top portion of fuse 12 and manipulating fuse 12 within fuse receptacle 20 to accomplish the switching function described below.

Please replace paragraph 36 with the following paragraph:

[0036] Mounting insert footings 80 are received in receptacles 82 on either side of fuse receptacle 20 so that switch housing assembly 14 may be secured in position within the end use application. Each mounting footing 80 includes a threaded bore for receiving a fastener (not shown) inserted through mounting ~~apertures 84~~ apertures 83 located on either side of fuse receptacle 20. Thus, insert footings 80, when engaged by a fastener, securely position switch housing assembly 14 in a desired position.

Please replace paragraph 37 with the following paragraph:

[0037] A nonconductive ~~cover 86~~ cover 90 is affixed to housing 52 to form a safe, protective enclosure for the above-described components of switch housing assembly 14 and to complete fuse receptacle 20. In one embodiment, housing 52 and ~~cover 86~~ cover 90 are fabricated from nonconductive materials, such as plastic and thermoplastic materials, capable of withstanding operating environment of fuse disconnect switch assembly 10 and conditions capable of opening fuse 12. In an illustrative embodiment, ~~cover 86~~ cover 90 is permanently bonded to housing 52 according to known method and techniques, such as for example, ultrasonic bonding techniques.

Please replace paragraph 40 with the following paragraph:

[0040] Switch housing assembly 100 includes a housing 102 having fuse terminal openings 104 in a bottom 106 of fuse receptacle 108 for receiving fuse terminal blades 30 (shown in Figure 2). An electrically conductive resilient clip 109 and associated reinforcing, pre-stressed wire spring element 111 is located below each fuse terminal opening 104 and located in a cavity 110 below fuse receptacle 108. A bridge portion 112 extends outwardly from each clip 109 and to a box style contact assembly 114 located in a wiring cavity 116 for connection to either a line input wire or bus (not shown) or a load wire (not shown). The stripped wires are inserted through wire input ports 118 in wiring cavities 116 and into a wire receptacle 120 in each box style ~~receptacle~~ contact assembly 114 located in each wiring cavity 116. A screw type connector 122 is accessed through a top opening 124 in each wiring cavity 116 for securely coupling the line and load wire to the respective box style contact assembly 114. After box style contact assemblies 114 have been wired, a circuit through fuse 12 is completed when fuse terminals 30 (shown in Figure 2) are inserted through fuse terminal openings 104 and received by clips 109.

Please replace paragraph 44 with the following paragraph:

[0044] A nonconductive cover 152 is affixed to housing 102 to form a safe, protective enclosure for the above-described components of switch housing assembly 100

and to complete fuse receptacle 108. In one embodiment, housing 102 and ~~cover 150~~ cover 152 are fabricated from nonconductive materials, such as plastic and thermoplastic materials, capable of withstanding operating environment of the fuse disconnect switch assembly and conditions capable of opening the associated fuse, such as fuse 12 (shown in Figures 1 and 2 and described above). In an illustrative embodiment, ~~cover 150~~ cover 152 is permanently bonded to housing 102 according to known method and techniques, such as for example, ultrasonic bonding techniques.

Please replace paragraph 48 with the following paragraph:

[0048] Switch housing assembly 160 includes a housing 162 having fuse terminal openings 164 in a bottom 166 of fuse receptacle 168 for receiving fuse terminal blades 30 (shown in Figure 2). An electrically conductive resilient clip 170, 171 and associated reinforcing, pre-stressed wire spring element 173 is located below each fuse terminal opening 164 and located in a cavity 172 below fuse receptacle 168. A bridge portion 174 extends downwardly from clip 170 and to an electrically conductive bullet contact assembly 176 for connection to either a line input bus (not shown) or a load bus (not shown). A bridge ~~portion 168~~ portion 169 extends outwardly from clip 171 and to a box style contact assembly 180 located in a wiring cavity 182 for connection to either a line input wire (not shown) or a load wire (not shown). A stripped wire is inserted through a wire input port 184 in wiring cavity 182 and into a wire receptacle 186 in box style ~~receptacle~~ contact assembly 180. A screw type connector 188 is accessed through a top opening 190 in wiring cavity 182 for securely coupling the line or load wire to box style contact assembly 180. After box style contact assembly 180 has been wired and bullet contact assembly 176 plugged into a bus bar, a circuit through fuse is completed when fuse terminals 30 (shown in Figure 2) are inserted through fuse terminal openings 164 and received by clips 170, 171.

Please replace paragraph 50 with the following paragraph:

[0050] A switch housing internal alarm terminal 192 is positioned adjacent fuse clip 170 within an adjacent cavity 194, and includes a projecting ridge 196 at a top end 198 that protrudes through an opening 200 in a side wall 202 of fuse receptacle 168. Thus, when fuse 12 is fully inserted into fuse receptacle 168, alarm terminal projecting ridge 196 contacts fuse alarm terminal 42 (shown in Figure 2) through fuse housing opening 44 (shown in Figure 2). Internal alarm terminal 192 is further coupled to a remote output alarm terminal 204 that extends though a ~~bottom 206~~ bottom or side of switch housing 160, thereby completing an electrical path for an open fuse alarm signal for transmission to end use equipment during an open fuse condition. In an exemplary embodiment, a conductive wire extends between internal alarm terminal 192 and remote output alarm terminal 204 to establish an electrical connection therebetween.

Please replace paragraph 59 with the following paragraph:

[0059] Mounting insert ~~footings 258~~ footings 259 are received in receptacles 260 on either side of fuse receptacle 228 so that switch housing assembly 220 may be secured in position within the end use application. Each mounting ~~footing 258~~ footing 259 includes a threaded bore for receiving a fastener (not shown) inserted through mounting apertures 261 located on either side of fuse ~~receptacle 20~~ receptacle 228. Thus, insert ~~footings 258~~ footings 259, when engaged by a fastener, securely position switch housing assembly 220 in a desired position.

Please replace paragraph 66 with the following paragraph:

[0066] It is contemplated that another common bus bar, such as bus ~~bar 288~~ bar 282 could be employed in connection with terminal stud 302 instead of or in addition to bus ~~bar 288~~ bar 282 attached to terminal stud 242 as illustrated. Thus, common bus bars may be employed for line side and/or load side electrical connections and auxiliary connections as desired.

Please replace paragraph 68 with the following paragraph:

[0068] A fused disconnect switch assembly is therefore provided that facilitates installation using common bus bars. Switching is achieved by inserting or extracting a pull out fuse assembly, such as fuse 12, from fuse receptacle 228, and local and remote opened fuse indication provides ready indication of opened fuses for replacement. Because a variety of differently rated fuses are accommodated by switch housing ~~receptacle 280~~ receptacle 228, a versatile fused disconnect system is provided that is suitable for a wide variety of applications.

Please replace paragraph 69 with the following paragraph:

[0069] Figure 12 is a perspective assembly view of exemplary pull out fuse assembly 12 for use with the foregoing switch housing assemblies 14 (shown in Figures 3 and 4), 100 (shown in Figures 5 and 6), 160 (shown in Figures 7 and 8), 220 (shown in Figure 9), and 280 (shown in Figures 10 ~~and 11~~ and 11), although it is contemplated that other types of fuses may be likewise employed with switch housing assemblies, 14, 100, 160, 220 and 280.

Please replace paragraph 70 with the following paragraph:

[0070] Fuse 12 includes opposite front and back ~~covers 280, 282~~ covers 303, 304, that are attached to one another with known fasteners, including but not limited to ~~rivets 284~~ rivets 305 and screws (not shown). Disposed between front and back ~~covers 280, 282~~ covers 303, 304 is a fuse ~~assembly 286~~ assembly 306 including fuse housing 32, fuse terminals 30 extending from housing 32, and primary fuse link 34 electrically coupled to fuse terminals 30 within a fuse ~~compartment 288~~ compartment 307 formed into fuse housing 32. As illustrated in Figure 12, fuse link 34 is a substantially flat and generally linear conductive strip including an area of reduced cross section, or a weak spot therein. Upon an occurrence of a predetermined current fault condition, dependent upon

dimensions and characteristics of fuse link 34, the weak spot reaches an operating temperature sufficient to melt, disintegrate vaporize, decompose, or otherwise open fuse link 34 at or near the weak spot to break an electrical connection through fuse link 34. It is contemplated, however, that a variety of fuse elements may be employed in alternative embodiments in lieu of the illustrative fuse link 34 without departing from the scope of the present invention. For instance, non-linear (e.g., bent or curved) fuse elements, fuse elements including a plurality of weak spots, and wire fuse elements without weak spots, in addition to other fuse elements familiar to those in the art, may be likewise employed in the present invention.

Please replace paragraph 71 with the following paragraph:

[0071] Terminal ~~posts 290~~ posts 308 extend through a top ~~surface 292~~ surface 309 of fuse ~~compartment 288~~ compartment 307 for establishing an electrical connection to open circuit indication device 36. Alarm terminal 42 is fitted within a ~~compartment 294~~ compartment and also is established in electrical communication with open circuit indication device 36.

Please replace paragraph 72 with the following paragraph:

[0072] Open fuse indication device 36 includes a printed circuit ~~board 296~~ board 310 including ~~apertures 298~~ apertures 311 for electrical connection to terminal ~~posts 290~~ posts 308 that are in turn, coupled to fuse terminals 30 that establish line and load electrical connections to external circuitry (not shown). Printed circuit ~~board 296~~ board 310 includes high resistance electronic circuitry, explained below, that operates LED 38 in response to a voltage drop across terminal ~~posts 290~~ posts 308 when primary fuse link 34 melts, disintegrates, vaporizes or otherwise opens and breaks an electrical connection between fuse terminals 30 via fuse link 34. As such, LED 38 is illuminated when fuse link 34 operates, thereby providing local fuse state indication. Circuitry on printed circuit board also signals external equipment, such as a relay in a telecommunications system, through

alarm terminal 42 and associated alarm terminals of a switch housing assembly, such as assemblies 14, 100, 160, 220 and 280.

Please replace paragraph 73 with the following paragraph:

[0073] A ~~label 300~~ label 312 is attached to a top ~~surface 302, 304~~ surface 313, 314 of front and back ~~covers 282, 280~~ covers 303, 304, respectively, when fuse 12 is assembled. ~~Label 300~~ Label 312, in one embodiment, includes indicia of fuse characteristics and ratings, as well as opening therethrough for accommodating open circuit indication device LED 38 so that fuse state indication is readily ascertainable from visual inspection of LED 38. If LED 38 is not illuminated, fuse 12 is functional, i.e., fuse link 34 has not opened due to fault current conditions. On the other hand, if LED is illuminated, fuse 12 is not operational and should be replaced with a functional fuse.

Please replace paragraph 74 with the following paragraph:

[0074] Fuse ~~assembly 286~~ assembly 306 further includes an ~~opening 304~~ opening 315 extending through bottom of fuse housing 32 to facilitate introduction of an arc quenching media, such as silica sand, to surround terminals 30 and fuse link 34 within fuse ~~compartment 38.~~ compartment 307 to prevent and/or suppress arcing between fuse terminals 30 when fuse link 24 opens. A plug 316 is inserted into opening ~~opening 304~~ opening 315 after fuse ~~compartment 288~~ compartment 307 is filled with the arc quenching media to seal fuse ~~compartment 38~~ compartment 307 as fuse 12 is assembled. In an exemplary embodiment, ~~plug 34~~ plug 316 is a metal ball applied to ~~opening 304~~ opening 315 according to known techniques.

Please replace paragraph 75 with the following paragraph:

[0075] Additionally, a polarization ~~projection 308~~ projection 317 extends from one side of fuse housing 32 that is received in a complementary groove in a side of a fuse

receptacle of a switch housing (see for example, Figure 1). ~~Projection 308~~ Projection 317 prevents insertion of fuse 12 into the fuse receptacle except in a designated orientation when ~~projection 308~~ projection 317 is inserted into the groove. Thus, correct polarization of the fuse terminals is ensured with respect to associated line and load connections with the applicable switch housing assembly.

Please replace paragraph 76 with the following paragraph:

[0076] Figure 13 schematically illustrates an alarm ~~circuit 310~~ circuit 320 of fuse 12 (shown in Figures 1, 2 and 12) in use. Fuse terminals 30 (shown in Figures 1, 2 and 12) are connected to line and load circuitry of the end use application at ~~points 312 and 314~~ points 322 and 324 through applicable terminal contact portions of a switch housing assembly, such as those described above. An electrical circuit is therefore established through fuse link 34 (also shown in Figures 2 and 12) and through an electronic monitoring ~~circuit 316~~ circuit 326 formed on printed circuit board 296 (shown in Figure 12) of open fuse indication device 36 (also shown in Figure 12). Electronic monitoring ~~circuit 316~~ circuit 326 has a sufficiently high resistance so that in normal operation of fuse 12 substantially all of the current flowing through fuse 12 passes through fuse link 34.

Please replace paragraph 77 with the following paragraph:

[0077] When fuse link 34 opens in a current overload or short circuit condition, electronic monitoring ~~circuit 316~~ circuit 326 detects a voltage drop across terminals 30 and illuminates LED 38 (shown in Figure 12), as well as outputs an alarm signal through alarm terminal 42 (shown in Figures 2 and 12) to a remote output alarm ~~terminal 318~~ terminal 328 of a switch housing assembly, such as assemblies 14, 100, 160, 220 and 280 described above. Alarm terminal ~~output 318~~ output 328 is coupled to end-user ~~circuitry 320~~ circuitry 330 that in an illustrative embodiment, includes a ~~relay 322~~ relay 332 that may be used to identify a location of an operated or opened fuse 12 in a system employing a large number of fuses in various locations. In one embodiment, a load side of LED 38 is connected to

output alarm ~~terminal 318~~ terminal 328, thereby supplying 20 mA current to ~~relay 322~~ relay 332 for remote fuse state indication. Thus, as LED 38 is energized, a remote alarm signal is also sent through output alarm ~~terminal 318~~ terminal 328.

Please replace paragraph 78 with the following paragraph:

[0078] Figure 14 illustrates an exemplary electronic monitoring ~~circuit 316~~ circuit 326 for alarm ~~circuit 310~~ circuit 330 (shown in Figure 13). Terminal J1 is coupled to the line or input side of the fuse, and more specifically, to fuse terminal ~~post 290~~ post 308 (shown in Figure 12) that is associated with line side circuitry of the fuse application. Terminal J2 is coupled to the load or output side of the fuse, and more specifically, to fuse terminal ~~post 290~~ post 308 (shown in Figure 12) that is associated with load side circuitry of the fuse application. Terminal J3 is electrically connected through an appropriate impedance of to the return or common electrical ground of the fused circuit. A pair of matched transistors, namely an NPN transistor Q1 and a PNP transistor Q2 are employed with diodes D3, D4 to prevent current leakage (about 1.2. mA in one embodiment) through respective transistors Q1, Q2, Therefore, diodes D3, D4 prevent false fuse state indication resulting from low base emitter voltage of transistors Q1 and Q2, and further provide transient immunity for electronic monitoring circuit 316 arc-voltage during operation of the fuse. A bipolar LED 38 (indicated by D5 in Figure 14 and also shown in Figure 12) is coupled to transistors Q1, Q2 and terminal J3.

Please replace paragraph 79 with the following paragraph:

[0079] In normal operation, electronic monitoring ~~circuit 316~~ circuit 326 is a passive component, i.e., active components of electronic monitoring circuit are non-conducting and voltage drop across terminals J1 and J2 is negligible. Consequently, LED 38 is not illuminated and stress on the circuit components is primarily thermal. However,

after an overload or short-circuit condition in the fused circuit causes fuse 12, or more specifically fuse link 34 to operate, the resultant voltage drop across terminals J1 and J2 causes either transistor Q1 or Q2, depending upon system voltage polarity, to saturate and actively conduct to energize LED 38.

Please replace paragraph 80 with the following paragraph:

[0080] More specifically, in case of positive system voltage, full system voltage is impressed across terminals J1 and J2 when fuse link 34 has opened, thereby forward biasing a base-emitter junction of PNP transistor Q2 through resistor R1. In this condition, as the base-emitter junction voltage is greater than an associated minimum forward bias ~~voltage~~ voltage, a transistor collector-emitter junction of PNP transistor Q2 saturates and the system voltage is applied across LED 38, thereby illuminating the LED.

Please replace paragraph 82 with the following paragraph:

[0082] Appropriate selection of resistor R1 ensures saturation of transistors Q1, Q2 under positive and negative voltage conditions. Saturation of transistors Q1, Q2 electronically switches the line or input side of the fuse at terminal J1 in series with the alarm output terminal J3, thereby illuminating the bipolar LED 38 to locally indicate the presence of an open-fuse condition. For remote open-fuse alarm indication, terminal J3 is connected to the return or common electrical ground of the fused circuit through a device such as a relay as illustrated in Figure 13. When an open-fuse condition exists, the electronic monitoring ~~circuit 316~~ circuit 326 will cause the relay to change state and provide the ability to remotely identify the presence of the open-fuse condition.